REMARKS

Reconsideration and removal of the grounds for rejection are respectfully requested.

Claims 1-43 were in the application, claims 1-23, 27, 28 and 43 were withdrawn in response to a restriction requirement, claim 24 has been amended, claim 36 was previously cancelled.

Claims 24-26, 29, 30, 34, 35 and 37-42 were rejected as being obvious over Flint in view of Cryer et. al. and in view of Lee.

Claim 24 has been amended to clarify that the inventive method encompasses using egg yolk obtained from an egg laying farm animal to provide the ingestible composition for delivering the antibodies contained therein to the target animal, that is, it is the egg yolk itself that is ingested, and no purification or isolation of the antibodies is necessary to practice the method of the invention. Support for the amendments is found at least on page 19, line 24-page 20, line 3, and page 26, lines 17-24.

To establish a prima facie case of obviousness based on a combination of references, there should be some teaching, suggestion or motivation in the prior art to make the specific combination that was made by the applicant. In re Raynes, 7 F.3d 1037, 1039, 28 U.S.P.Q.2D (BNA) 1630, 1631 (Fed. Cir. 1993); In re Oetiker, 977 F.2d 1443, 1445, 24 U.S.P.Q.2D (BNA) 1443, 1445 (Fed. Cir. 1992). However, the search for a teaching or suggestion should not be rigid, and a more flexible approach to a determination of obviousness should be used so as to avoid a conflict with common sense. KSR International Co. v. Teleflex Inc. et al, 2007 U.S. Lexis 4745 U.S. Supreme Court, April 30, 2007. In this decision, however, the Supreme Court reaffirmed that obviousness can not be established by a hindsight combination to produce the claimed invention. In re Gorman, 933 F.2d 982, 986, 18 U.S.P.Q.2D (BNA) 1885, 1888 (Fed. Cir. 1991). It is the prior art itself, and not the applicant's achievement, that must establish the obviousness of the combination.

The Examiner has acknowledged that Flint does not mention egg laying animals for use in producing anti-adipocyte antibodies and further Flint does not indicate that anti-adipocyte antibodies can be orally administered.

The Examiner also recognizes that Cryer is directed to the administration of antibodies, which have been isolated and purified, not to the oral administration of egg yolk containing antibodies.

Lastly, the Examiner refers to Lee as teaching the production of antibodies from egg yolk.

The Examiner believed one skilled in the art would be motivated to arrive at the present invention based on these references. However, the examiner's proposed combination is improper and a fair reading of these patents would not lead one to the applicants' invention.

In support of the patentability of the presently rejected claims, enclosed herewith is a declaration by one of the inventors, Tianshui Lu. The Curriculum Vitae for Professor Lu is also enclosed. Professor Lu, who is presently employed as a researcher at the Laboratory of Animal Physiology and Biochemistry, College of Veterinary Medicine, Naijing Agricultural University, has extensive experience in Veterinary medicine.

Dr. Lu has reviewed the references and explained the differences that would lead one away from, not to, the present invention.

As to Flint, Professor Lu states that:

> "Flint is directed to the immunization of sheep with rat fat cell membranes. The animal source of the anti-rat adipocyte serum was essentially lamb blood, and isolation and purification steps were necessary to isolate the serum for administration by injection. One skilled in the art would be lead to believe that such steps are necessary to achieve a successful outcome. Certainly, one would not believe Flint to consider these steps optional, or easily dispensed with. Thus, Flint would lead a person skilled in the art away from the very simple, cost effective and easily practiced method of our present invention."(Para 6)

As to Cryer, Professor Lu states:

"Cryer et al only further proves the novelty and non-obviousness of the present invention, as Cryer is also strictly concerned with the isolation and purification of Porcine adipocyte antigens, as illustrated in Claim 1:

"An isolated antigen present in the plasma membrane of mature porcine white adipocytes, which is not detectable in porcine liver, kidney, spleen, brain, cardiac muscle, skeletal muscle or lung or in porcine erythrocytes, which reacts with antisera raised against said adipocytes, said antigen being selected from the group consisting of a 37, 50, 51, and 121 KiloDaltons relative molecular mass antigen as determined by SDS-PAGE using markers of relative molecular mass 29, 45, 66, 97, 116, and 205 KiloDaltons." (Claim 1).... Cryer discusses research by Flint and found it lacking as follows:

"Although some of the above work has demonstrated experimentally the possibility of treating fat deposition in vivo by the administration of anti-adipocyte antibodies, it is a problem that the production of such antibodies may be very labour-intensive." (Col. 2, l. 1-5, Emphasis added)

Cryer proposes instead "The administration of the plasma membranes themselves as antigens could be considered, if they could be conjugated to carrier proteins and could thereby by made "non-self". However, the production of plasma membrane material from slaughterhouses poses difficulty of quality control. If the antigen(s) responsible for the fat reduction could be isolated and purified, the way would be open to making them by a recombinant DNA method or by protein synthesis." (Col. 2, l. 5-13, Emphasis added)

The invention presented by Cryer was described as follows:

"After considerable research, the inventors have isolated from porcine fat cell plasma membranes, antigens which appear to be specific to adipocytes (at least in the sense of not being detectable in many other body tissues of the animal) and reactive with antibodies to fat cell plasma membranes. (col. 2, l. 15-21)...The information given herein enables antigens to be identified, isolated and, by methods well known in the art, purified.(col. 3, l. 56-58) ...While either active or passive immunisation is likely to have an effect, active immunisation is preferred and for this purpose the antigen will have to be made "non-self" so that it does not suffer host immune tolerance. ....The favoured proposed route of administration for active immunisation is by subcutaneous injection." (Col. 4, l. 18-23, 32-33, Emphasis added)" (Para 7-10)

Professor Lu thus concludes that :

Combining ...Flint with Cryer, giving them a fair reading from the point of one skilled in that art, it is quite clear that isolation and purification are necessary steps to preparation of the isolate for administration by injection. Mentioning oral administration alone, without any proof of the capability is mere speculation. In fact, given the likely degradation when passing through the digestive system, one would not expect oral administration to be particularly effective. Certainly, given the emphasis on purification and injection, one skilled in the art would not be lead to the ingestible composition of the present invention. To the contrary, combining Flint and Cryer leads one to believe that it is necessary to first isolate and purify the material before administration, preferably by injection, as both Flint and Cryer propose." (Para 11)

Professor Lu then reviews the Lee patent and finds:

"Adding Lee simply describes other purification steps, here of eggs, but still with quite labor intensive steps. Just as discussed in Cryer, lee suffers as "the production of such antibodies may be very labour-intensive" and of course, quite costly to perform as well. ...

Lee discusses the isolation and purification steps as follows:

"The present invention is directed toward a method for purification of immunoglobulin egg yolk, including the steps of extracting the egg yolk immunoglobulin using medium-chain fatty acids including, for example, caprylic acid, to obtain an immunoglobulin-containing aqueous phase, followed by the steps of subjecting the aqueous phase to ion-exchange chromatography, for example, anion exchange chromatography; subjecting the recovered immunoglobulin fraction to additional ion-exchange chromatography, for example, cation exchange chromatography; subjecting the recovered immunoglobulin to protein precipitation, e.g., ammonium sulfate precipitation; and subjecting the recovered immunoglobulin to gel filtration and/or de-salting by dialysis or diafiltration. (Col. 3, l. 58-col. 4, l. 4, Emphasis added) (Para 12-13)

Based on the review of these patents by Professor Lu, he states that:

"It is difficult to find anything in these three patents which would lead one skilled in the art to the present invention. To the contrary, they lead one away from, not toward the present invention, and so one skilled in that art would not find the present invention to be obvious. Rather they would be quite surprised that a low cost, simply, high volume production of an ingestible composition, that can be added to a standard animal feed for ease in administration could actually work.

I believe the inventive method and animal feed as presented in the

claims of our patent application are distinguishable from the prior art as the cited patents lead one away from the particular steps of:

"(iii) allowing antibodies to be produced by said egg-laying farm animal in response to said antigen, thereby depositing said antibodies in eggs of said egg-laying farm animal;

(iv) obtaining egg yolk containing said antibodies from said eggs of said egg-laying farm animal;

(v) providing an ingestible composition including an amount of said egg yolk which contains an effective amount of said antibodies to said adipose tissue therein; and

(vi) orally administering the ingestible composition including said egg yolk to said target animal for ingestion... .". (Para 14-14)

It is quite clear that there is no teaching or suggestion supporting the combination proposed by the Examiner, and none would be found by one skilled in the art, as established by Professor Lu. Even if made, the combination the Examiner proposes would require one skilled in the art to disregard the actual teachings in the cited patents to arrive at the applicants invention; Flint teaches use of non-egg laying animals; Cryer teaches the administration of plasma membranes, with purification and isolation steps, and Lee further teaches multiple purification steps, none of which are required to effectively administer the egg yolk itself which contains the antibodies as done in the present invention. None of these patents teach or suggest the particular method of the invention, as illustrated by Professor Lu above. Consequently, claims 24-26, 29, 30, 34, 35 and 37-42 are not rendered obvious thereby, and withdrawal of the rejection is respectfully requested.

Based on the above amendment, remarks and the declaration by Professor Lu, reconsideration and allowance of the application are respectfully requested. However should the Examiner believe that direct contact with the applicant's attorney would advance the prosecution of the application, the examiner is invited to telephone the undersigned at the number given below.

Respectfully submitted,

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